15

Injury and Violence Prevention

Lead Agency: Centers for Disease Control and Prevention

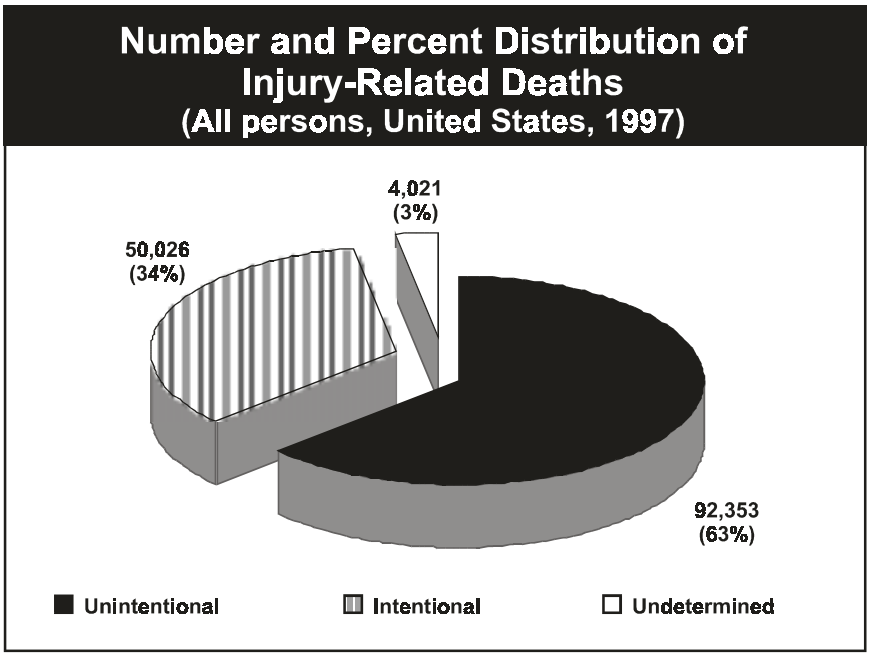
Contents

Goal

Reduce injuries, disabilities, and deaths due to unintentional injuries and violence.

Overview

The risk of injury is so great that most persons sustain a significant injury at some time during their lives.[1] Nevertheless, this widespread human damage too often is taken for granted, in the erroneous belief that injuries happen by chance and are the result of unpreventable "accidents." In fact, many injuries are not "accidents," or random, uncontrollable acts of fate; rather, most injuries are predictable and preventable.[2]



Source: National Vital Statistics System (NVSS), CDC, NCHS, 1997.

Issues and Trends

Injury Prevention

In 1997, 149,691 Americans died from injuries due to a variety of causes such as motor vehicle crashes, firearms, poisonings, suffocation, falls, fires, and drownings. About 400 persons die from injuries each day, including 55 children and teenagers. One death out of every 17 in the United States results from injury.[3] Of these deaths, 67 percent are classified as unintentional and 33 percent as intentional. Unintentional injury deaths include approximately 42,000 resulting from

motor vehicle crashes per year. In 1997, of approximately 50,000 intentional injury deaths, almost 31,000 were classified as suicide and nearly 20,000 as homicide.[1] In 1997, injuries accounted for 20 percent more years of potential life lost (YPPL) than cancer did (1,990/100,000 compared to 1,500/100,000).[4]

For ages 1 through 44 years, deaths from injuries far surpass those from cancer—the overall leading natural cause of death at these ages—by about 3 to 1. Injuries cause more than two out of five deaths (43 percent) of children aged 1 through 4 years and result in 4 times the number of deaths due to birth defects, the second leading cause of death for this age group. For ages 15 to 24 years, injury deaths exceed deaths from all other causes combined from ages 5 through 44 years. For ages 15 to 24 years, injuries are the cause of nearly four out of five deaths. After age 44 years, injuries account for fewer deaths than other health problems, such as heart disease, cancer, and stroke. However, despite the decrease in the proportion of deaths due to injury, the death rate from injuries is actually higher among older persons than among younger persons.

Injuries are often classified on the basis of events and behaviors that preceded them, as well as the intent of the persons involved. For example, many injuries are preceded by alcohol consumption in amounts or circumstances that increase risk of injury.[5] Although the events leading to an intentional and unintentional injury differ, the outcomes and extent of the injury are similar.

Unintentional Injury Prevention

More persons aged 1 to 34 years die as a result of unintentional injuries than any other cause of death. Across all ages, 95,644 persons died in 1997 as a result of unintentional injuries. Motor vehicle crashes account for approximately half the deaths from unintentional injuries; other unintentional injuries rank second, and falls rank third, followed by poisonings, suffocations, and drownings.[6]

Additional millions of persons are incapacitated by unintentional injuries, with many suffering lifelong disabilities. These events occur disproportionately among the young and the elderly. In 1995, 29 million persons visited emergency departments (EDs) as a result of unintentional injuries.[7]

Although the greatest impact of injury is in human suffering and loss of life, the financial cost is staggering. Included in the costs associated with injuries are the costs of direct medical care and rehabilitation as well as lost income and productivity. By the late 1990s, injury costs were estimated at more than $224 billion annually, an increase of 42 percent over the 1980s.[8] As with other health problems, it costs far less to prevent injuries than to treat them. For example:

- Every child safety seat saves $85 in direct medical costs and an additional $1,275 in other costs.
- Every bicycle helmet saves $395 in direct medical costs and other costs.

- Every smoke detector saves $35 in direct medical costs and an additional $865 in other costs.

- Every dollar spent on poison control centers saves $6.50 in medical costs.[9]

Several themes become evident when examining reports on injury prevention and control, including acute care, treatment, and rehabilitation. First, unintentional injury comprises a group of complex problems involving many different sectors of society. No single force working alone can accomplish everything needed to reduce the number of injuries. Improved outcomes require the combined efforts of many fields, including health, education, transportation, law, engineering, and safety sciences. Second, many of the factors that cause unintentional injuries are closely associated with violent and abusive behavior. Injury prevention and control addresses both unintentional and intentional injuries.

Violence and Abuse Prevention

Violence in the United States is pervasive and can change quality of life. Reports of children killing children in schools are shocking and cause parents to worry about the safety of their children at school. Reports of gang violence make persons fearful for their safety. Although suicide rates began decreasing in the mid 1990s, prior increases among youth aged 10 to 19 years and adults aged 65 years and older have raised concerns about the vulnerability of these population groups. Intimate partner violence and sexual assault threaten people in all walks of life.

Violence claims the lives of many of the Nation's young persons and threatens the health and well-being of many persons of all ages in the United States. On an average day in America, 53 persons die from homicide and a minimum of 18,000 persons survive interpersonal assaults, 84 persons complete suicide, and as many as 3,000 persons attempt suicide. (See Focus Area 18. Mental Health and Mental Disorders.)[10]

Youth continue to be involved as both perpetrators and victims of violence. The elderly, females, and children continue to be targets of both physical and sexual assaults, which are frequently perpetrated by individuals they know. Examples of general issues that impede the public health response to progress in this area include the lack of comparable data sources, lack of standardized definitions and definitional issues, lack of resources to adequately establish consistent tracking systems, and lack of resources to fund promising prevention programs.

Because national data systems will not be available in the first half of the decade for tracking progress, one subject of interest, maltreatment of elders, is not addressed in this focus area's objectives. The maltreatment of persons aged 60 years and older is a topic for research and data collection for the coming decade.

Disparities

While every person is at risk for injury, certain types of injuries appear to affect some groups more frequently. American Indians or Alaska Natives have disproportionately higher death rates from motor vehicle crashes, residential fires, and drownings. In addition, their death rates are about 1.75 times higher than the death rate for the overall U.S. population. Higher death rates from unintentional injury also occur among African Americans.[1]

Certain racial and ethnic groups have more new cases of unintentional injuries and deaths than whites. Unintentional injuries are the second leading cause of death for American Indian males and the third leading cause of death for American Indian females. More than 1,000 American Indians die from injuries, and 10,000 more are hospitalized for injuries each year. The age-adjusted injury death rate for American Indians is 3 times higher than that of all other Americans. Among American Indians, 46 percent of the YPLL is a result of injury, which is 5 times greater than the YPLL due to a next highest cause, heart disease (8 percent). Among the factors that contribute to these increased rates for American Indians are rural or isolated living, minimal emergency medical services, and great distances to sophisticated trauma care.[11]

African American, Hispanic, and American Indian children are at higher risk than white children for home fire deaths.[12] Adults aged 65 years and older are at increased risk of death from fire because they are more vulnerable to smoke inhalation and burns and are less likely to recover. Sense impairment (such as blindness or hearing loss) may prevent older adults from noticing a fire, and mobility impairment may prevent them from escaping its consequences. Older adults also are less likely to have learned fire safety behavior and prevention information, since they grew up at a time when little fire safety was taught in schools, and most current educational programs target children.

In every age group, drowning rates are almost 2 to 4 times greater for males than for females.[13] In 1997, the overall drowning rate for African Americans was 50 percent greater than that for whites; however, the rate was not higher for all age groups. For example, among children aged 1 through 4 years, the drowning rate for whites was slightly higher than the rate for African Americans. For children aged 5 to 19 years, African American children are twice as likely to drown as white children.[14]

Homicide victimization is especially high among African American and Hispanic youths. In 1995, African American males and females aged 15 to 24 years had homicide rates (74.4/100,000) that were more than twice the rate of their Hispanic counterparts (34.1/100,000) and nearly 14 times the rate of their white non-Hispanic counterparts (5.4/100,000).[15]

Trends in suicide among blacks aged 10 to 19 years in the United States during 1980-95 indicate that suicidal behavior among all youth has increased; however, rates for black youth have shown a greater increase.[1]

Although black youth historically have lower suicide rates than have whites, during 1980-95, the suicide rate for black youths aged 10 to 19 years increased from 2.1 to 4.5 per 100,000 population. As of 1995, suicide was the third leading cause of death among blacks aged 15 to 19 years.[17]

Opportunities

To reduce the number and severity of injuries, prevention activities must focus on the type of injury—drowning, fall, fire or burn, firearm, or motor vehicle.[18] For example, a nonfatal spinal cord injury produces the same outcome whether it was caused by an unintentional motor vehicle crash or an attempted suicide.

Understanding injuries allows for development and implementation of effective prevention interventions. Some interventions can reduce injuries from both unintentional and violence-related episodes. For instance, efforts to promote proper storage of firearms in homes can help reduce the risk of assaultive, intentional self-inflicted, and unintentional shootings in the home.[19] Higher taxes on alcoholic beverages are associated with lower death rates from motor vehicle crashes and lower rates for some categories of violent crime, including rape.[20, 21]

Many injuries and injury-related deaths occur in some population groups (such as younger children from birth to 4 years) where the intentionality of the injury is unknown and requires more detailed investigation. As these cases are examined, interventions can be developed to address ways injuries occur—for instance, unintentional poisonings in children or hangings among teenagers—that are emerging in society as growing public health concerns.

Poverty, discrimination, lack of education, and lack of employment opportunities are important risk factors for violence and must be addressed as part of any comprehensive solution to the epidemic of violence. Strategies for reducing violence should begin early in life, before violent beliefs and behavioral patterns can be adopted.

Many potentially effective culturally and linguistically competent intervention strategies for violence prevention exist, such as parent training, mentoring, home visitation, and education.[22] Evaluation of ongoing programs is a major component to help identify effective approaches for violence prevention. The public health approach to violence prevention is multidisciplinary, encouraging experts varying from scientific disciplines, organizations, and communities to work together to find solutions to violence in our Nation.

Many school-aged children suffer disabling and fatal injuries each year. As educational programs for school children are developed and proven effective in prevent-

ing injuries, these programs should be included in quality health education curricula at the appropriate grade level. Education should aim at reducing risks of injury directly and at preparing children to be knowledgeable adults. (See Focus Area 7. Educational and Community-Based Programs.)

Interim Progress Toward Year 2000 Objectives

A total of 45 objectives addressed injury prevention in Healthy People 2000. Twenty-six objectives were specific for unintentional injuries and 19 objectives were specific for violence prevention. By the end of the decade, targets had been met for 11 objectives. Unintentional injury objectives showing achievement were unintentional injury hospitalizations, residential fire deaths, nonfatal head injuries, spinal cord injuries, nonfatal poisonings, and pedestrian deaths. Violence prevention objectives which met their targets were homicide, suicide, weapon carrying by adolescents, conflict resolution in schools, and child death review systems.

Progress was made for 13 objectives. Much of the progress made in unintentional injury objectives were with motor vehicle fatalities and use of vehicle occupant restraints. Those unintentional injury objectives showing progress were unintentional injury deaths, motor vehicle deaths, motor vehicle crash deaths, motor vehicle occupant protection systems, helmet use by motorcyclists and bicyclists, safety belt use laws, alcohol-related motor vehicle deaths, and drownings. Violence prevention objectives showing progress were firearm-related deaths, partner abuse, rape and attempted rape, physical fighting among adolescents 14 to 17 years of age, and the number of States with firearm storage laws.

There were six objectives with no progress or movement away from the Healthy People 2000 targets. In unintentional injury, the hospitalization rate for hip fractures remains above baseline levels, indicating no progress toward the year 2000 target. Data from five violence prevention objectives also show movement away from the year 2000 target. Those objectives relate to child abuse and neglect, assault injuries, suicide attempts among adolescents aged 14 to 17 years, battered women turned away from shelters, and suicide prevention protocols in jails.

Note: Unless otherwise noted, data are from Centers for Disease Control and Prevention, National Center for Health Statistics, *Healthy People 2000 Review, 1998-99.*

Injury and Violence Prevention

Goal: Reduce disabilities, injuries, and deaths due to unintentional injuries and violence.

Number	Objective
Injury Prevention	
15-1	Nonfatal head injuries
15-2	Nonfatal spinal cord injuries
15-3	Firearm-related deaths
15-4	Proper firearm storage in homes
15-5	Nonfatal firearm-related injuries
15-6	Child fatality review
15-7	Nonfatal poisonings
15-8	Deaths from poisoning
15-9	Deaths from suffocation
15-10	Emergency department surveillance systems
15-11	Hospital discharge surveillance systems
15-12	Emergency department visits
Unintentional Injury Prevention	
15-13	Deaths from unintentional injuries
15-14	Nonfatal unintentional injuries
15-15	Deaths from motor vehicle crashes
15-16	Pedestrian deaths
15-17	Nonfatal motor vehicle injuries
15-18	Nonfatal pedestrian injuries
15-19	Safety belts
15-20	Child restraints
15-21	Motorcycle helmet use
15-22	Graduated driver licensing
15-23	Bicycle helmet use
15-24	Bicycle helmet laws
15-25	Residential fire deaths

15-26 Functional smoke alarms in residences

15-27 Deaths from falls

15-28 Hip fractures

15-29 Drownings

15-30 Dog bite injuries

15-31 Injury protection in school sports

Violence and Abuse Prevention

15-32 Homicides

15-33 Maltreatment and maltreatment fatalities of children

15-34 Physical assault by intimate partners

15-35 Rape or attempted rape

15-36 Sexual assault other than rape

15-37 Physical assaults

15-38 Physical fighting among adolescents

15-39 Weapon carrying by adolescents on school property

Injury Prevention

15-1. Reduce hospitalization for nonfatal head injuries.

Target: 54 hospitalizations per 100,000 population.

Baseline: 75.5 hospitalizations for nonfatal head injuries per 100,000 population in 1997 (age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Hospital Discharge Survey (NHDS), CDC, NCHS.

Total Population, 1997	**Hospitalizations for Nonfatal Head Injuries** Rate per 100,000
TOTAL	75.5
Race and ethnicity	
American Indian or Alaska Native	DSU
Asian or Pacific Islander	DSU
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	88.5
White	55.3
Hispanic or Latino	DSU
Not Hispanic or Latino	DSU
Black or African American	DSU
White	DSU
Gender	
Female	51.8
Male	98.5
Education level	
Less than high school	DNC
High school graduate	DNC
At least some college	DNC

Total Population, 1997	Hospitalizations for Nonfatal Head Injuries Rate per 100,000
Select populations	
Males aged 15 to 25 years	157.3
Persons aged 75 years and older	225.4

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.

15-2. Reduce hospitalization for nonfatal spinal cord injuries.

Target: 2.6 hospitalizations per 100,000 population.

Baseline: 4.8 hospitalizations for nonfatal spinal cord injuries per 100,000 population in 1997 (age adjusted to the year 2000 standard population).

Target setting method: 46 percent improvement. (Better than the best will be used when data are available.)

Data source: National Hospital Discharge Survey (NHDS), CDC, NCHS.

Total Population, 1997	Hospitalizations for Nonfatal Spinal Cord Injuries Rate per 100,000
TOTAL	4.8
Race and ethnicity	
American Indian or Alaska Native	DSU
Asian or Pacific Islander	DSU
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	DSU
White	2.7
Hispanic or Latino	DSU
Not Hispanic or Latino	DSU
Black or African American	DSU
White	DSU
Gender	
Female	DSU
Male	6.1

Total Population, 1997	Hospitalizations for Nonfatal Spinal Cord Injuries Rate per 100,000
Education level	
Less than high school	DNC
High school graduate	DNC
At least some college	DNC

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.

The physical and emotional toll associated with head and spinal cord injuries can be significant for the survivors and their families. Persons with existing disabilities from head and spinal cord injuries are at high risk for further secondary disabilities. Prevention efforts should target motor vehicle crashes, falls, firearm injury, diving, and water safety.

Approximately 5 percent of the persons who sustained a brain injury each year and who do not experience a good recovery were injured with a firearm. About 12 percent of the new cases of quadriplegia and paraplegia each year are attributable to spinal cord injuries related to firearms.[23]

Motor vehicle crashes cause 44 percent of all spinal cord injuries.

Among pedalcyclists killed, most died from head injuries. Similarly, the common cause of death among motorcyclists is catastrophic head injury. Death rates from head injuries have been shown to be twice as high among cyclists in States lacking helmet laws or laws that apply only to young riders, compared with States where laws apply to all riders.

Falls account for 87 percent of all fractures among adults aged 65 years and older and are the second leading cause of both spinal cord injury and brain injury for this age group.[24, 25] Falls also cause the majority of deaths and severe injuries from head trauma among children under age 14 years. Falls account for 90 percent of the most severe playground-related injuries treated in hospital emergency departments (mostly head injuries and fractures) and one-third of reported fatalities. Head injuries are involved in about 75 percent of all reported fall-related deaths associated with playground equipment.

Many diving-related incidents also result in spinal cord injury. Diving-related injury first becomes an issue during adolescence. Injuries to males outnumber injuries to females. Diving injuries account for one of eight spinal cord injuries, with half of those injuries resulting in quadriplegia.[55]

15-3. Reduce firearm-related deaths.

Target: 4.9 deaths per 100,000 population.

Baseline: 11.0 deaths per 100,000 population were related to firearm injuries in 1998 (preliminary data; age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Vital Statistics System (NVSS), CDC, NCHS.

Total Population, 1997*	**Firearm-Related Deaths** Rate per 100,000
TOTAL	12.1
Race and ethnicity	
American Indian or Alaska Native	11.4
Asian or Pacific Islander	5.0
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	22.9
White	10.4
Hispanic or Latino	10.7
Cuban	13.1
Mexican	11.1
Puerto Rican	8.5
Not Hispanic or Latino	12.1
Black or African American	23.7
White	10.0
Gender	
Female	3.4
Male	21.4
Education level (aged 25 to 64 years)	
Less than high school	22.9
High school graduate	18.3
At least some college	7.4

Total Population, 1997*	Firearm-Related Deaths Rate per 100,000
Select firearm-related deaths	
Homicides	4.9
Suicides	6.6
Unintentional	0.4

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.
*New data for population groups will be added when available.

15-4. Reduce the proportion of persons living in homes with firearms that are loaded and unlocked.

Target: 16 percent.

Baseline: 19 percent of the population lived in homes with loaded and unlocked firearms in 1998 (preliminary data; age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Health Interview Survey (NHIS), CDC, NCHS.

Total Population, 1994*	Loaded, Unlocked Firearms in Home Percent
TOTAL	20
Race and ethnicity	
American Indian or Alaska Native	DSU
Asian or Pacific Islander	DSU
Asian	DSU
Native Hawaiian and other Pacific Islander	DSU
Black or African American	24
White	20
Hispanic or Latino	DSU
Not Hispanic or Latino	20
Black or African American	25
White	20

Total Population, 1994*	Loaded, Unlocked Firearms in Home Percent
Gender	
Female	18
Male	22
Education level (aged 25 years and older)	
Less than high school	23
High school graduate	19
At least some college	20

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.
*New data for population groups will be added when available.

15-5. Reduce nonfatal firearm-related injuries.

Target: 10.9 injuries per 100,000 population.

Baseline: 26 nonfatal firearm-related injuries per 100,000 population in 1996.

Target setting method: Better than the best.

Data source: National Electronic Injury Surveillance System (NEISS), Consumer Product Safety Commission (CPSC).

Total Population, 1996	Nonfatal Firearm-Related Injuries Rate per 100,000
TOTAL	26
Race and ethnicity	
American Indian or Alaska Native	DSU
Asian or Pacific Islander	DSU
Asian	DSU
Native Hawaiian and other Pacific Islander	DSU
Black or African American	DNA
White	DNA
Hispanic or Latino	35
Not Hispanic or Latino	DNA
Black or African American	93
White	11

Total Population, 1996	Nonfatal Firearm-Related Injuries Rate per 100,000
Gender	
Female	6
Male	47
Education level	
Less than high school	DNC
High school graduate	DNC
At least some college	DNC
Select populations	
Males aged 15 to 24 years	152

DNA =Data have not been analyzed. DNC = Data are not collected. DSU =Data are statistically unreliable.

The United States has the highest rates of lethal childhood violence than every other industrialized country.[27] The increase in the total homicide rate from 1979 through 1993 resulted solely from increases in firearms homicides.[28] Fatalities, however, are only part of the problem. For each of the 35,957 persons killed by a gunshot wound in the United States in 1995, approximately 3 more received non-fatal wounds.[29]

15-6. (Developmental) Extend State-level child fatality review of deaths due to external causes for children aged 14 years and under.

Potential data sources: National Vital Statistics System (NVSS), CDC, NCHS; Inter-Agency Council on Child Abuse and Neglect (ICAN) National Database, FBI Uniform Crime Report, U.S. Department of Justice.

Death resulting from injury is one of the most profound public health issues facing children in the United States today. In 1997, nearly 19,000 children aged 19 years and under were victims of injury—33 percent from violence and 67 percent from unintentional injury.[30]

In examination of these trends in childhood injury-related cause of death, information has typically come from one of several sources (vital statistics, protective service records, and the FBI Uniform Crime Report), each with specific limitations. In response to the increasing trend of violence against children and the lack of a comprehensive data source on violent childhood deaths, the Child Fatality Review Team (CFRT) process was developed in 1978 in California.

The goal of the CFR teams is the prevention of childhood fatalities. Their responsibility is to review so-called “suspicious” or “preventable” childhood fatalities.

Minimal or core standards for CFR teams must include representatives from criminal justice, health, and social services. After integrating information from multiple sources, review teams strive to determine if the cause and manner of death were recorded accurately and suggest prevention initiatives for all relevant agencies. Simply reviewing fatalities is not helpful unless recommendations for prevention also are included and plans are made for periodic followup to ensure that recommendations are being acted on.

Focusing on children aged 14 years and under will include most "unexplained" childhood deaths and is considered a more reasonable goal to achieve. However, States should continue to improve their CFRT systems. Teams with adequate resources are encouraged to extend their review to all causes of death for all children aged 18 years and under as their ultimate goal. CFR teams also should include culturally appropriate members.

15-7. Reduce nonfatal poisonings.

Target: 292 nonfatal poisonings per 100,000 population.

Baseline: 348.4 nonfatal poisonings per 100,000 population in 1997 (age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data sources: National Hospital Ambulatory Medical Care System (NHAMCS), CDC, NCHS; NEISS, CPSC.

Total Population, 1997 (unless noted)	**Nonfatal Poisonings** Rate per 100,000
TOTAL	348.4
Race and ethnicity	
American Indian or Alaska Native	DSU
Asian or Pacific Islander	DSU
Asian	DSU
Native Hawaiian and other Pacific Islander	DSU
Black or African American	464.5
White	340.6
Hispanic or Latino	DSU
Not Hispanic or Latino	DSU
Black or African American	DSU
White	DSU

Total Population, 1997 (unless noted)	Nonfatal Poisonings Rate per 100,000
Gender	
Female	410.9
Male	281.6
Education level	
Less than high school	DNC
High school graduate	DNC
At least some college	DNC
Select populations of poisonings	
Assault or attempted homicide	6 (1996)
Intentional suicide attempts	63 (1996)
Unintentional poisonings	268 (1996)
Children aged 4 years and under	460

DNA =Data have not been analyzed. DNC =Data are not collected. DSU =Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.

15-8. Reduce deaths caused by poisonings.

Target: 1.8 death per 100,000 population.

Baseline: 5.8 deaths per 100,000 population were caused by poisonings in 1998 (preliminary data; age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data sources: National Vital Statistics System (NVSS), CDC, NCHS; NEISS, CPSC.

Total Population, 1997* (unless noted)	Poisoning Deaths Rate per 100,000
TOTAL	6.6
Race and ethnicity	
American Indian or Alaska Native	8.0
Asian or Pacific Islander	2.0
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	8.1
White	6.6

Total Population, 1997* (unless noted)	Poisoning Deaths Rate per 100,000
Hispanic or Latino	5.7
Cuban	3.1
Mexican	4.6
Puerto Rican	12.7
Not Hispanic or Latino	6.7
Black or African American	8.3
White	6.6
Gender	
Female	3.9
Male	9.4
Education level (aged 25 to 64 years)	
Less than high school	16.2
High school graduate	13.8
At least some college	5.7
Select populations	
Unintentional poisoning	3.3 (1996)
Suicide	2.0 (1996)
Homicide	DSU (1996)

DNA =Data have not been analyzed. DNC =Data are not collected. DSU =Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.
*New data for population groups will be added when available.

Children are at significantly greater risk from poisoning death and exposure than adults because children are more likely to ingest potentially harmful chemicals. In 1995, 80 children aged 14 years and under died from poisoning. Children aged 4 years and under accounted for nearly half of these deaths. In 1996, more than 1.1 million unintentional poisonings among children aged 5 years and under were reported to U.S. poison control centers. Approximately 90 percent of all poison exposures occur at a residence.[31]

In 1996, 29 children aged 5 years and under died from exposure to medicines and household products. Among children aged 5 years and under, 60 percent of poisoning exposures come from nonpharmaceutical products such as cosmetics, cleaning substances, plants, foreign bodies, toys, pesticides and art supplies; 40 percent come from pharmaceuticals. Immediately calling a poison control center can reduce the likelihood of severe poisoning, decrease the cost of a poisoning incident, and prevent the need for a hospital emergency department (ED) visit.

The total annual cost of poisoning-related injury and death exceeds $7.6 billion among children aged 14 years and under. Children aged 4 years and under account for $5.1 billion, or two-thirds, of these costs. Medical expenses associated with a poisoning exposure average $925 per case. The average cost of hospital treatment for a poisoning exposure is $8,700.[32]

15-9. Reduce deaths caused by suffocation.

Target: 2.9 death per 100,000 population.

Baseline: 4.0 deaths per 100,000 population were caused by suffocation in 1998 (preliminary data; age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Vital Statistics System (NVSS), CDC, NCHS.

Total Population, 1997*	**Suffocation Deaths** Rate per 100,000
TOTAL	4.0
Race and ethnicity	
American Indian or Alaska Native	6.2
Asian or Pacific Islander	3.8
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	4.5
White	3.9
Hispanic or Latino	3.0
Not Hispanic or Latino	4.1
Black or African American	4.6
White	4.0
Gender	
Female	2.3
Male	5.9
Education level (aged 25 to 64 years)	
Less than high school	6.1
High school graduate	4.8
At least some college	2.1

Total Population, 1997*	Suffocation Deaths Rate per 100,000
Select Populations	
Homicide	DNA
Suicide	DNA
Unintentional	DNA

DNA =Data have not been analyzed. DNC = Data are not collected. DSU =Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.
*New data for population groups will be added when available.

In 1997, 10,650 persons died from suffocation. In the same year, 934 children aged 14 years and under died from suffocation. Of these children, 64 percent were aged 4 years and under.[33] Approximately 5,000 children aged 14 years and under are treated in hospital EDs for aspirating and ingesting toys and toy parts each year. The majority of childhood suffocations, strangulations, and chokings occur in the home. The total annual cost of airway obstruction injury among children aged 14 and under exceeds $1.5 billion. Children aged 4 years and under account for more than 60 percent of these costs. It is estimated that as many as 30 percent of the infants whose deaths are attributed to Sudden Infant Death Syndrome (SIDS) each year are found in potentially suffocating environments, frequently on their stomachs, with their noses and mouths covered by soft bedding.[34]

15-10. Increase the number of States and the District of Columbia with statewide emergency department surveillance systems that collect data on external causes of injury.

Target: All States and the District of Columbia.

Baseline: 12 States had statewide ED surveillance systems that collected data on external causes of injury in 1998.

Target setting method: Total coverage.

Data source: External Cause of Injury Survey, American Public Health Association (APHA), September 1998.

15-11. Increase the number of States and the District of Columbia that collect data on external causes of injury through hospital discharge data systems.

Target: All States and the District of Columbia.

Baseline: 23 States collected data on external causes of injury through hospital discharge data systems in 1998.

Target setting method: Total coverage.

Data source: External Cause of Injury Survey, American Public Health Association (APHA).

15-12. Reduce hospital emergency department visits caused by injuries.

Target: 112 hospital emergency department visits per 1,000 population.

Baseline: 130 hospital emergency department visits per 1,000 population were caused by injury in 1997.

Target setting method: Better than the best.

Data source: National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC, NCHS.

Total Population, 1997	**Injury-Related Hospital Emergency Department Visits**
	Rate per 1,000
TOTAL	130
Race and ethnicity	
American Indian or Alaska Native	DSU
Asian or Pacific Islander	DSU
Asian	DSU
Native Hawaiian and other Pacific Islander	DSU
Black or African American	180
White	125
Hispanic or Latino	DSU
Not Hispanic or Latino	DSU
Black or African American	DSU
White	DSU

Gender	
Female	115
Male	145
Education level	
Less than high school	DNC
High school graduate	DNC
At least some college	DNC

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.

Emergency department (ED) patient records and hospital discharge systems are an important source of public health surveillance and an integral part of the vision of electronically linked health information systems that can serve multiple purposes. Because of the volume and case mix of patients they treat, EDs are well positioned to provide data on cause and severity of injuries. Access to such data can help with the development of population-based public health interventions.

Unintentional Injury Prevention

15-13. Reduce deaths caused by unintentional injuries.

Target: 20.8 deaths per 100,000 population.

Baseline: 33.3 deaths per 100,000 population were caused by unintentional injuries in 1998 (preliminary data; age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Vital Statistics System (NVSS), CDC, NCHS.

Total Population, 1997*	**Unintentional Injury Deaths** Rate per 100,000
TOTAL	34.8
Race and ethnicity	
American Indian or Alaska Native	62.7
Asian or Pacific Islander	20.9
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	40.9
White	34.3

Total Population, 1997*	Unintentional Injury Deaths Rate per 100,000
Hispanic or Latino	30.1
Cuban	23.2
Mexican	32.1
Puerto Rican	27.7
Not Hispanic or Latino	35.1
Black or African American	40.9
White	34.2
Gender	
Female	21.8
Male	49.2
Education level (aged 25 to 64 years)	
Less than high school	51.6
High school graduate	39.9
At least some college	17.2
Select populations	
Black or African American male	60.3
American Indian or Alaska Native male	89.6
Hispanic male	45.4
White male	48.4

DNA =Data have not been analyzed. DNC = Data are not collected. DSU =Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.
*New data for population groups will be added when available.

15-14. (Developmental) Reduce nonfatal unintentional injuries.

Potential data source: National Hospital Discharge Survey (NHDS), CDC, NCHS.

15-15. Reduce deaths caused by motor vehicle crashes.

Target: 9.0 deaths per 100,000 population for 15-15a and 1 death per 100 million vehicle miles traveled (VMT) for 15-15b.

Baseline: 15.0 deaths per 100,000 population were caused by motor vehicle crashes in 1998 (preliminary data; age adjusted to the year 2000 standard population) for 15-15a and 2 deaths per 100 million VMT were caused by motor vehicle crashes in 1997 for 15-15b.

Target setting method: Better than the best for 15-15a; 50 percent improvement for 15-15b. (Better than the best will be used when data are available.)

Data sources: National Vital Statistics System (NVSS), CDC, NCHS; Federal Highway Administration (FHWA).

Total Population, 1997* (unless noted)	Motor Vehicle Crash Deaths	
	15-15a. Rate per 100,000	**15-15b.** Rate per 100 Million VMT
TOTAL	15.8	2
Race and ethnicity		
American Indian or Alaska Native	31.5	DNC
Asian or Pacific Islander	10.6	DNC
Asian	DNC	DNC
Native Hawaiian and other Pacific Islander	DNC	DNC
Black or African American	17.0	DNC
White	15.8	DNC
Hispanic or Latino	15.2	DNC
Cuban	13.9	DNC
Mexican	17.1	DNC
Puerto Rican	9.1	DNC
Not Hispanic or Latino	16.3	DNC
Black or African American	17.8	DNC
White	16.1	DNC
Gender		
Female	10.4	DNA
Male	21.7	DNA
Education level (aged 25 to 64 years)		
Less than high school	25.0	DNC
High school graduate	20.7	DNC

Total Population, 1997* (unless noted)	Motor Vehicle Crash Deaths	
	15-15a. Rate per 100,000	**15-15b.** Rate per 100 Million VMT
Select populations		
Children aged 14 years and under	4.2 (1998)	DNA
Persons aged 15 to 24 years	25.4 (1998)	DNA
Persons aged 70 years and older	24.3 (1998)	DNA
Motorcyclists	NA	21.3

DNA =Data have not been analyzed. DNC =Data are not collected. DSU =Data are statistically unreliable. NA; Not applicable.

Note: Age adjusted to the year 2000 standard population; 1998 data are preliminary.

*New data for population groups will be added when available.

15-16. Reduce pedestrian deaths on public roads.

Target: 1 pedestrian death per 100,000 population.

Baseline: 2 pedestrian deaths per 100,000 population occurred on public roads in 1997.

Target setting method: 50 percent improvement. (Better than the best will be used when data are available.)

Data source: Fatality Analysis Reporting System (FARS), DOT, NHTSA.

Total Population, 1997	Pedestrian Deaths on Public Roads Rate per 100,000
TOTAL	2
Gender	
Female	1
Male	3
Select populations	
Persons aged 70 years and older	4

Data for other population groups currently are not collected.

15-17. Reduce nonfatal injuries caused by motor vehicle crashes.

Target: 1,000 nonfatal injuries per 100,000 population.

Baseline: 1,270 nonfatal injuries per 100,000 population were caused by motor vehicle crashes in 1997.

Target setting method: 21 percent improvement. (Better than the best will be used when data are available.)

Data source: General Estimates System (GES), DOT, NHTSA.

Total Population, 1997	**Nonfatal Motor Vehicle Crash Injuries** Rate per 100,000
TOTAL	1,270
Select populations	
Persons aged 16 to 20 years	3,116
Persons aged 21 to 24 years	2,496

Data for other population groups currently are either not collected or not analyzed.

15-18. Reduce nonfatal pedestrian injuries on public roads.

Target: 21 nonfatal injuries per 100,000 population.

Baseline: 29 nonfatal pedestrian injuries per 100,000 population occurred on public roads in 1997.

Target setting method: 28 percent improvement. **(**Better than the best will be used when data are available.)

Data source: General Estimates System (GES), DOT, NHTSA.

Total Population, 1997	Nonfatal Pedestrian Injuries on Public Roads Rate per 100,000
TOTAL	29
Select populations	
Persons aged 5 to 9 years	56
Persons aged 10 to 15 years	46
Persons aged 16 to 20 years	36

Data for other population groups currently are either not collected or not analyzed.

15-19. Increase use of safety belts.

Target: 92 percent.

Baseline: 69 percent of the total population used safety belts in 1998.

Target setting method: 33 percent improvement. (Better than the best will be used when data are available.)

Data sources: National Occupant Protection Use Survey (NOPUS), DOT, NHTSA; Youth Risk Behavior Survey (YRBS), NCCDPHP.

Total Population, 1998	Safety Belt Use Percent
TOTAL	69
Select populations	
9th through 12th grade students	81

Data for other population groups currently are not collected.

15-20. Increase use of child restraints.

Target: 100 percent.

Baseline: 92 percent of motor vehicle occupants aged 4 years and under used child restraints in 1998 (preliminary data).

Target setting method: Total coverage.

Data source: National Occupant Protection Use Survey (NOPUS), Controlled Intersection Study, DOT, NHTSA.

Data for population groups currently are not collected.

15-21. Increase the proportion of motorcyclists using helmets.

Target: 79 percent.

Baseline: 67 percent of motorcycle operators and passengers used helmets in 1997.

Target setting method: 18 percent improvement. (Better than the best will be used when data are available.)

Data sources: National Occupant Protection Use Survey (NOPUS), DOT, NHTSA; Youth Risk Behavior Survey (YRBS), CDC, NCCDPHP.

Motorcyclists, 1997	**Helmet Use** Percent
TOTAL	67
Select populations	
9th through 12th grade students	64

Data for other population groups currently are not collected.

15-22. Increase the number of States and the District of Columbia that have adopted a graduated driver licensing model law.

Target: All States and the District of Columbia.

Baseline: 23 States had a graduated driver licensing model law in 1999.

Target setting method: Total coverage.

Data source: U.S. Licensing Systems for Young Drivers, Insurance Institute for Highway Safety.

Motor vehicle crashes remain a major public health problem. They are the leading cause of death for persons in the United States aged 5 to 29 years. In 1998, 41,471 persons died in motor vehicle crashes.[35] Thirty-eight percent of these deaths occurred in alcohol-related crashes.[35] The motor vehicle death rate per 100,000 persons is especially high among persons aged 16 to 24 years and persons aged 75 years and older. Safety belts, when worn correctly, are the most effective way for occupants to reduce the risk of death and serious injury in a motor vehicle crash on public roads (including those on Indian Reservations). As of December 1998, the national safety belt use rate was 69 percent.

In 1998, 69,000 pedestrians were injured and 5,220 were killed in traffic crashes in the United States. On average, a pedestrian is killed in a motor vehicle crash every 101 minutes, and one is injured every 8 minutes.[36]

In 1998, persons aged 70 years and older made up 9 percent of the population but accounted for 14 percent of all traffic fatalities and 18 percent of all pedestrian fatalities. Compared with the fatality rate for drivers aged 25 through 69 years, the rate for drivers in the oldest group is 9 times higher.[37]

Older persons also are more susceptible than younger persons to medical complications following motor vehicle crash injuries. Thus, they are more likely to die from their injuries.[37]

Fewer persons aged 70 years and older are licensed to drive, compared to younger persons, and they drive fewer miles per licensed driver. Persons in this older age group, however, have higher rates of fatal crashes per mile driven, per 100,000 persons, and per licensed driver than any other group except young drivers (aged 16 to 24 years).

Pedestrians account for about 13 percent of motor vehicle deaths. The problem of pedestrian deaths and injuries is worse among young children and older adults. Children are more likely to be injured, while older adults are more likely to die in pedestrian crashes.[36]

As of December 1997, 49 States had safety belt laws. Eleven States had primary enforcement laws, and the remaining 38 States had secondary enforcement laws.[38] In 1998, the average observed belt use rate by States with secondary enforcement laws was 62 percent, compared to 79 percent in States with primary enforcement laws.[38]

Among children aged 1 to 14 years, crash injuries are the leading cause of death. In 1998, 2,549 children aged 14 years and under died in motor vehicle crashes.[35] The use of age-appropriate restraint systems can reduce this problem. Because all States have child restraint laws, more children now ride restrained. But loopholes in the laws exempt many children from coverage under either safety belt or child restraint use laws. Another problem is the persistence of incorrectly used child restraints and safety belts.[39]

Motorcycles are less stable and less visible than cars, and they have high-performance capabilities. When motorcycles crash, their riders lack the protection of an enclosed vehicle, so they are more likely to be injured or killed. The number of deaths on motorcycles per mile traveled is about 16 times the number of deaths in cars. Wearing a motorcycle helmet reduces the chances of dying in a motorcycle crash by 29 percent and reduces the chances of brain injury by 67 percent. An unhelmeted rider is 40 percent more likely to suffer a fatal head injury, compared with a helmeted rider. In 1998, 2,284 motorcyclists died in crashes.[40]

Teenagers accounted for 10 percent of the U.S. population in 1997 and 15 percent of the motor vehicle deaths. In 1998, 3,427 drivers aged 15 to 20 years were killed, and an additional 348,000 were injured in motor vehicle crashes.[41] Graduated licensing laws allow a young driver to gain driving experience at incremental levels. Graduated licensing is a system for phasing in on-road driving that allows beginners to obtain their initial experience under lower risk conditions.

The National Committee on Uniform Traffic Laws and Ordinances (NCUTLO) has developed a model law that calls for a minimum of 6 months in the learner stage and a minimum of 6 months in the intermediate license stage with night driving restrictions. Twenty-three States have all the core provisions of the model graduated licensing model law developed by NCUTLO. The NCUTLO model also requires applicants for intermediate and full licenses to have no safety belt or zero tolerance violations and to be conviction-free during the mandatory holding periods.

15-23. (Developmental) Increase use of helmets by bicyclists.

Potential data sources: Consumer Product Safety Commission; Behavioral Risk Factor Surveillance System (BRFSS), CDC; World Health Organization Study of Health Behavior in School Children.

15-24. Increase the number of States and the District of Columbia with laws requiring bicycle helmets for bicycle riders.

Target: All States and the District of Columbia.

Baseline: 11 States had laws requiring bicycle helmets for bicycle riders under age 15 years in 1999.

Target setting method: Total coverage.

Data source: Bicycle Helmet Safety Institute.

Head injuries are the most serious type of injury sustained by pedalcyclists of all ages. In 1998, 761 bicyclists were killed in crashes involving motor vehicles, and an additional 53,000 were injured in traffic crashes. Almost one-third (30 percent) of the pedalcyclists killed in traffic crashes in 1998 were between age 5 and 15 years. The proportion of pedalcyclist fatalities among persons aged 25 to 64 years was 1.7 times higher in 1997 than in 1987 (46 percent and 27 percent, respectively).[42] More bicyclists were killed on major roads than on local roads (59 percent compared with 36 percent) in 1997.[43]

Bicycle helmets reduce the risk of bicycle-related head injury by 85 percent.[44] Although no States have bicycle laws that apply to all riders, 15 States have laws that apply to young bicyclists under age 18 years.[45] In addition, several localities have ordinances that require some or all bicyclists to wear helmets. Helmets are

important for riders of all ages, especially because older bicyclists represent two-thirds of bicycle deaths.[44]

15-25. Reduce residential fire deaths.

Target: 0.6 deaths per 100,000 population.

Baseline: 1.2 deaths per 100,000 population were caused by residential fires in 1998 (preliminary data; age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Vital Statistics System (NVSS), CDC, NCHS.

Total Population, 1997*	**Residential Fire Deaths** Rate per 100,000
TOTAL	1.3
Race and ethnicity	
American Indian or Alaska Native	2.2
Asian or Pacific Islander	0.8
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	3.4
White	1.1
Hispanic or Latino	0.8
Cuban	DSU
Mexican	0.7
Puerto Rican	1.4
Not Hispanic or Latino	1.4
Black or African American	3.5
White	1.1
Gender	
Female	1.0
Male	1.7
Education level (aged 25 to 64 years)	
Less than high school	2.0
High school graduate	1.3
At least some college	0.5

Total Population, 1997*	Residential Fire Deaths Rate per 100,000
Select populations	
Persons aged 4 years and younger	2.1
Persons aged 65 years and older	3.5
Black or African American	3.4
Females	2.6
Males	4.5

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.
*New data for population groups will be added when available.

15-26. Increase functioning residential smoke alarms.

Target and baseline:

Objective	Increase in Functioning Residential Smoke Alarm on Every Floor	Baseline	2010 Target
		Percent	
15-26a.	Total population living in residences with functioning smoke alarm on every floor	87 (1994)	100
15-26b.	Residences with a functioning smoke alarm on every floor	87 (1998)	100

Age adjusted to the year 2000 standard population.

Target setting method: Total coverage.

Data source: National Health Interview Survey (NHIS), CDC, NCHS.

Total Population, 1994	15-26a. Live in Residences With Functioning Smoke Alarm on Every Floor Percent
TOTAL	87
Race and ethnicity	
American Indian or Alaska Native	89
Asian or Pacific Islander	86
Asian	DSU
Native Hawaiian and other Pacific Islander	DSU
Black or African American	88
White	86
Hispanic or Latino	90
Not Hispanic or Latino	87
Black or African American	88
White	86
Gender	
Female	87
Male	86
Education level (aged 25 years and older)	
Less than high school	87
High school graduate	87
At least some college	87

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.

In 1997, 3,220 deaths occurred as a result of residential fires. Residential property loss caused by these fires was roughly $4.4 billion. In 1995, the cost of all fire-related deaths and injuries, including deaths and injuries to firefighters, was estimated at $15.8 billion.[46]

Fires are the second leading cause of unintentional injury death among children. Compared to the total population, children aged 4 years and under have a fire death rate more than twice the national average. About 800 children aged 14 years and under die by fire each year, and 65 percent of these children are under age 5 years. Children are disproportionately affected because they react less effectively to fire than adults, and they also generally sustain more severe burns at lower temperatures than adults. Two-thirds of fire-related deaths and injuries among children under age 5 years occur in homes without working smoke alarms.[47]

Working smoke alarms on every level and in every sleeping area of a home can provide residents with sufficient warning to escape from nearly all types of fires. Therefore, working smoke alarms can be highly effective in preventing fire-related deaths. If a fire occurs, homes with smoke alarms are roughly half as likely to have a death occur as homes without smoke alarms.[47]

15-27. Reduce deaths from falls.

Target: 2.3 deaths per 100,000 population.

Baseline: 4.5 deaths per 100,000 population were caused by falls in 1998 (preliminary data; age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Vital Statistics System (NVSS), CDC, NCHS.

Total Population, 1997*	**Deaths From Falls** Rate per 100,000
TOTAL	4.6
Race and ethnicity	
American Indian or Alaska Native	5.6
Asian or Pacific Islander	3.5
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	3.1
White	4.7
Hispanic or Latino	3.3
Cuban	2.4
Mexican	3.4
Puerto Rican	2.7
Not Hispanic or Latino	4.6
Black or African American	3.1
White	4.7
Gender	
Female	3.3
Male	6.3

Total Population, 1997*	Deaths From Falls Rate per 100,000
Education level (aged 25 to 64 years)	
Less than high school	3.0
High school graduate	2.2
At least some college	1.1
Select populations	
Persons aged 65 to 84 years	16.4
Persons aged 85 years and older	104.9

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.
*New data for population groups will be added when available.

15-28. Reduce hip fractures among older adults.

Target and baseline:

Objective	Reduction in Hip Fractures	1997 Baseline	2010 Target
		Rate per 100,000	
15-28a.	Females aged 65 years and older	1,120.9	491.0
15-28b.	Males aged 65 years and older	563.1	450.5

Target setting method: Better than the best for 15-28a; 20 percent improvement for 15-28b. (Better than the best will be used when data are available.)

Data source: National Hospital Discharge Survey (NHDS), CDC, NCHS.

Adults Aged 65 Years and Older, 1997	Hip Fracture	
	15-28a. Females	15-28b. Males
	Rate per 100,000	
TOTAL	1,120.9	563.1
Race and ethnicity		
American Indian or Alaska Native	DSU	DSU
Asian or Pacific Islander	DSU	DSU
Asian	DNC	DNC
Native Hawaiian and other Pacific Islander	DNC	DNC

Adults Aged 65 Years and Older, 1997	Hip Fracture	
	15-28a. Females	15-28b. Males
	Rate per 100,000	
Black or African American	492.0	DSU
White	932.1	469.4
Hispanic or Latino	DSU	DSU
Not Hispanic or Latino	DSU	DSU
Black or African American	DSU	DSU
White	DSU	DSU
Gender		
Female	DNA	DNA
Male	DNA	DNA
Education level (aged 25 to 64 years)		
Less than high school	DNC	DNC
High school graduate	DNC	DNC
At least some college	DNC	DNC

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.

In 1996, falls became the second leading cause of injury deaths among adults aged 65 years and older. In 1997, 9,023 adults over age 65 years died as a result of falls.[48] Falls are the most common cause of injuries and hospital admissions for trauma among elderly persons. Since most fractures are the result of falls, understanding factors that contribute to falling is essential to designing effective intervention strategies. Alcohol use has been implicated in 35 to 63 percent of deaths from falls.[48a] For persons aged 65 years and older, 60 percent of fatal falls occur in the home, 30 percent occur in public places, and 10 percent occur in health care institutions.

The most serious fall-related injury is hip fracture. Approximately 212,000 hip fractures occur each year in the United States among adults aged 65 years and older; 75 to 80 percent of all hip fractures are sustained by females.[49] The impact of these injuries on the quality of life is enormous. Half of all elderly adults hospitalized for hip fracture cannot return home or live independently after the fracture. The total direct cost of all fall injuries for adults aged 65 years and older in 1994 was $20.2 billion.[50] Factors that contribute to falls include difficulties in gait and balance, neurological and musculoskeletal disabilities, psychoactive medications, dementia, and visual impairment.[51] Environmental hazards such as slippery surfaces, uneven floors, poor lighting on stairs, loose rugs, unstable furniture, grab bars in bathrooms, and objects on floors also may play a role.

15-29. Reduce drownings.

Target: 0.9 drownings per 100,000 population.

Baseline: 1.6 drownings per 100,000 population in 1998 (preliminary data; age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Vital Statistics System (NVSS), CDC, NCHS, CPSC.

Total Population, 1997* (unless noted)	**Drownings** Rate per 100,000
TOTAL	1.5
Race and ethnicity	
American Indian or Alaska Native	3.7
Asian or Pacific Islander	1.6
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	1.9
White	1.4
Hispanic or Latino	1.4
Cuban	DSU
Mexican	1.5
Puerto Rican	1.0
Not Hispanic or Latino	1.5
Black or African American	2.0
White	1.4
Gender	
Female	0.6
Male	2.4
Education level (aged 25 to 64 years)	
Less than high school	2.4
High school graduate	1.7
At least some college	0.8
Geographic location	
Urban	DNA
Rural	DNA

Total Population, 1997* (unless noted)	Drownings Rate per 100,000
Select populations	
Black or African American males	3.4
Children aged 4 years and younger	1.5
Males aged 15 to 34 years	1.8 (1998)

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population; 1998 data are preliminary.
*New data for population groups will be added when available.

In 1997, drownings accounted for over 4,000 deaths in the United States.[52] In 1992, 6,000 crashes involving recreational boats resulted in 3,700 injuries and 816 deaths.[53] Drowning is the second leading cause of injury-related death for children and adolescents aged 1 to 19 years, accounting for 1,502 deaths in 1995.[54]

Most deaths involving diving occur among persons aged 15 to 39 years, with the largest proportion (14.8 percent) occurring among persons aged 30 to 39 years. Many diving-related incidents result in spinal cord injury. Alcohol use is involved in about 50 percent of deaths associated with water recreation.[13]

Backyard swimming pools and spas represent the greatest risk to preschoolers, particularly those 18 to 30 months of age. Of the 600 annual downing deaths of children from birth to 5 years of age, more than 300 occur in residential swimming pools. Annually, approximately 2,300 nonfatal injuries sustained in residential swimming pools occur in this age group.[55]

15-30. Reduce hospital emergency department visits for nonfatal dog bite injuries.

Target: 114 hospital emergency department visits per 100,000 population.

Baseline: 151.4 hospital emergency department visits per 100,000 population were for nonfatal dog bite injuries in 1997 (age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data source: National Hospital Ambulatory Medical Care Survey (NHAMCS), CDC, NCHS.

Total Population, 1997	Hospital Emergency Department Visits for Nonfatal Dog Bite Injuries Rate per 100,000
TOTAL	151.4
Race and ethnicity	
American Indian or Alaska Native	DSU
Asian or Pacific Islander	DSU
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	115.1
White	164.2
Hispanic or Latino	DSU
Not Hispanic or Latino	DSU
Black or African American	DSU
White	DSU
Gender	
Female	150.8
Male	152.0
Education level	
Less than high school	DNC
High school graduate	DNC
At least some college	DNC

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.

Between 500,000 and 4 million persons in the United States are bitten by dogs every year.[56] Children are among the most vulnerable, and almost half of all people are estimated to have been bitten by a dog during childhood. Among children, more than half of bites have been to the head, face, or neck.

Because of the risk to large parts of the population, especially children, effective prevention strategies are needed to reduce the painful and costly burden of dog bites. More knowledge is needed through a combination of enhanced and coordinated dog bite reporting systems, expanded population-based surveys, and implementation and evaluation of prevention trials. Particularly for the more severe episodes, information needs to be obtained regarding high-risk situations, high-risk dogs, and elements of successful interventions.

15-31. (Developmental) Increase the proportion of public and private schools that require use of appropriate head, face, eye, and mouth protection for students participating in school-sponsored physical activities.

Potential data source: School Health Policies and Programs Study (SHPPS), CDC, NCCDPHP.

Trauma to the head, face, eyes, and mouth occurs frequently during school-sponsored physical activities. Schools with recreation and sports programs can reduce traumas by requiring students to use appropriate protective gear.

Violence and Abuse Prevention

15-32. Reduce homicides.

Target: 3.2 homicides per 100,000 population.

Baseline: 6.2 homicides per 100,000 population in 1998 (preliminary data; age adjusted to the year 2000 standard population).

Target setting method: Better than the best.

Data sources: National Vital Statistics System (NVSS), CDC, NCHS; Uniform Crime Reports, U.S. Department of Justice, Federal Bureau of Investigation.

Total Population, 1997*	**Homicides** Rate per 100,000
TOTAL	7.2
Race and ethnicity	
American Indian or Alaska Native	10.4
Asian or Pacific Islander	4.1
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	25.2
White	4.3
Hispanic or Latino	9.9
Cuban	11.4
Mexican	10.3
Puerto Rican	9.4

Total Population, 1997*	Homicides Rate per 100,000
Not Hispanic or Latino	6.8
Black or African American	26.1
White	3.3
Gender	
Female	3.2
Male	11.2
Education level (aged 25 to 64 years)	
Less than high school	18.3
High school graduate	10.5
At least some college	3.1
Select populations	
Children under 1 year	8.3
Children aged 1 to 4 years	2.4
Children aged 10 to 14 years	1.5
Adolescents aged 15 to 19 years	13.6
Persons aged 15 to 34 years	14.5
Intimate partners aged 14 to 45 years (spouse, ex-spouse, boyfriend, girlfriend)	DNC
Black or African Americans aged 15 to 34 years	55.0
Females	14.4
Males	97.6
Hispanic males aged 15 to 34 years	34.9

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
Note: Age adjusted to the year 2000 standard population.
*New data for population groups will be added when available.

Homicide was the cause of death for 19,491 Americans (7.2 per 100,000 population) in 1997.[58] Homicide is the second leading cause of death for young persons aged 15 to 24 years and the leading cause of death for African Americans in this age group.[59] Homicide rates are dropping among all groups, but the decreases are not as dramatic among youth, who already exhibit the highest rates. In 1997, 6,146 young persons aged 15 to 24 years were victims of homicide, amounting to almost 17 youth homicide victims per day in the United States.[60] Of all homicide victims in 1994, 38 percent were under age 24 years.[61] The homicide rate among males aged 15 to 24 years in the United States is 10 times higher than in Canada, 15 times higher than in Australia, and 28 times higher than in France or Germany.[62]

15-33. Reduce maltreatment and maltreatment fatalities of children.

15-33a. Reduce maltreatment of children.

Target: 11.1 per 1,000 children under age 18 years.

Baseline: 13.9 child victims of maltreatment per 1,000 children under age 18 years in 1997.

Target setting method: 20 percent improvement. (Better than the best will be used when data are available.)

Data source: National Child Abuse and Neglect Data System (NCANDS), Administration on Children, Youth and Families, Administration for Children and Families (ACF), Children's Bureau.

Data for population groups currently are not analyzed.

15-33b. Reduce child maltreatment fatalities.

Target: 1.5 per 100,000 of children under age 18 years.

Baseline: 1.7 per 100,000 child maltreatment fatalities in 1997.

Target setting method: 12 percent improvement. (Better than the best will be used when data are available.)

Data source: National Child Abuse and Neglect Data System (NCANDS), Children's Bureau, Administration on Children, Youth, and Families, Administration for Children and Families (ACF).

Data for population groups currently are not analyzed.

The 1997 Child Maltreatment report from the States to the National Child Abuse and Neglect Data System found there were approximately 984,000 victims of maltreatment, a decrease from more than 1 million victims in 1996 in the 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam. The rate of child victims was 13.9 per 1,000 children in the general population in 1997, which is slightly higher than the rate of 13.4 victims per 1,000 children in 1990. There were an estimated 1,196 fatalities due to child maltreatment in the 50 States and the District of Columbia. The findings regarding the types of maltreatment were as follows: 55.9 percent neglect, 24.6 percent physical abuse, 12.5 percent sexual abuse, and 6.1 percent emotional abuse. It is also important to note that 58.8 percent of the substantiated or indicated reports of maltreatment were from professional sources, legal, medical, social service, or education professionals. Based on data from 39 States, 75.4 percent of the perpetrators were the victim's parents, 10.2 percent were relatives, and 1.9 percent were individuals in other caretaking relationships.[63]

Information needs to be collected about new cases and causes of maltreatment. National surveys of new cases are needed to describe the magnitude of the problem. In addition, existing interventions and their impact need to be evaluated. Some long-term studies on home-visitation programs for young mothers have shown potential for preventing child abuse and neglect.

15-34. Reduce the rate of physical assault by current or former intimate partners.

Target: 3.6 physical assaults per 1,000 persons aged 12 years and older.

Baseline: 4.5 physical assaults per 1,000 persons aged 12 years and older by current or former intimate partners in 1994.

Target setting method: 20 percent improvement. (Better than the best will be used when data are available.)

Data source: National Crime Victimization Survey (NCVS), U.S. Department of Justice, Bureau of Justice Statistics.

Persons Aged 12 Years and Older, 1994*	**Physical Assault by Current and/or Former Intimate Partners** Rate per 1,000
TOTAL	4.5
Race and ethnicity	
American Indian or Alaska Native	DSU
Asian or Pacific Islander	DSU
Asian	DNC
Native Hawaiian and other Pacific Islander	DSU
Black or African American	DNA
White	DNA
Hispanic or Latino	DNC
Not Hispanic or Latino	DNA
Black or African American	DNA
White	DNA
Gender	
Female	7.6
Male	1.4

Persons Aged 12 Years and Older, 1994*	Physical Assault by Current and/or Former Intimate Partners Rate per 1,000
Education level	
Less than high school	DNA
High school graduate	DNA
At least some college	DNA

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.

15-35. Reduce the annual rate of rape or attempted rape.

Target: 0.7 rapes or attempted rapes per 1,000 persons.

Baseline: 0.9 rapes or attempted rapes per 1,000 persons aged 12 years and older in 1998.

Target setting method: Better than the best.

Data sources: National Crime Victimization Survey (NCVS), U.S. Department of Justice, Bureau of Justice Statistics.

Persons Aged 12 Years and Older, 1994*	Rape or Attempted Rape Rate per 1,000
TOTAL	1.5
Race and ethnicity	
Other (Asian/Pacific Islander and American Indian/Alaska Native)	1.9
Native Hawaiian and other Pacific Islander	DNC
Black or African American	2.4
White	1.3
Hispanic or Latino	1.6
Not Hispanic or Latino	1.5
Black or African American	DSU
White	DSU
Gender	
Female	2.7
Male	DSU

Persons Aged 12 Years and Older, 1994*	Rape or Attempted Rape Rate per 1,000
Education level	
Less than high school	DNA
High school graduate	DNA
At least some college	DNA

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
*New data for population groups will be added when available.

15-36. Reduce sexual assault other than rape.

Target: 0.2 sexual assaults other than rape per 1,000 persons aged 12 years and older.

Baseline: 0.6 sexual assaults other than rape per 1,000 persons aged 12 years and older in 1998.

Target setting method: Better than the best.

Data sources: Criminal Victimization in the United States, 1994; National Crime Victimization Survey (NCVS), U.S. Department of Justice, Bureau of Justice Statistics.

Persons Aged 12 Years and Older, 1994*	Sexual Assault Other Than Rape Rate per 1,000
TOTAL	0.5
Race and ethnicity	
Other (Asian/Pacific Islander and American Indian/Alaska Native)	0.6
Native Hawaiian and other Pacific Islander	DSU
Black or African American	0.3
White	0.6
Hispanic or Latino	0.9
Not Hispanic or Latino	0.5
Black or African American	DSU
White	DSU

Persons Aged 12 Years and Older, 1994*	Sexual Assault Other Than Rape Rate per 1,000
Gender	
Female	1.0
Male	0.1
Education level	
Less than high school	DNC
High school graduate	DNC
At least some college	DNC

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.
*New data for population groups will be added when available.

Both females and males experience family and intimate violence and sexual assault. Perpetrators can be the same or opposite sex. Male victimization of females is more common in intimate partner violence and sexual assault.

In 1995, almost 5,000 females in the United States were murdered. In those cases for which the Federal Bureau of Investigation has data on the relationship between the offender and the victim, 85 percent were killed by someone they knew. Nearly half of the females who knew the perpetrators were murdered by a husband, ex-husband, or boyfriend.[64] In 1994, more than 500,000 females were seen in hospital EDs for violence-related injuries, and 37 percent of those females were there for injuries inflicted by spouses, ex-spouses, or nonmarital partners.[65] Although most assault victims survive, they suffer physically and emotionally.

In 1985, a minimum of 16 percent of couples in the United States experienced an assault, and about 40 percent of these assaults involved severe violence, such as kicking, biting, punching, choking, and attacking with weapons.[66] In these families, nearly one out of eight of the husbands had carried out one or more acts of physical aggression against his wife during the preceding 12 months.[67]

Estimates of abuse rates during pregnancy also are a concern. A 1996 literature review indicted that estimated proportions of women experiencing intimate partner violence (IPV) during pregnancy ranged between 0.9 percent and 20.1 percent. The proportion of pregnant women who had experienced IPV at any time in the past ranged between 9.7 percent and 29.7 percent.[68]

Males who are physically violent toward their partners are more likely to be sexually violent toward them and are more likely to use violence toward children.[69] The perpetration of intimate partner violence is most common in adults who, as children or adolescents, witnessed intimate partner violence or became the targets of violence from their caregivers.[69]

Survey data from 1994 indicate that 407,190 females aged 12 years and older were victims of rape, attempted rape, or sexual assault.[70] Other surveys indicate that the problem is underestimated.[71] For example, the National Women's Study, in conjunction with estimates based on the U.S. Census, suggests that 12.1 million females in the United States have been victims of forcible rape sometime in their lives. According to this study, 0.7 percent or approximately 683,000 of adult females experienced a forcible rape in the last year.[72]

Teen dating violence is a concern that may stem from childhood abuse or other experiences with violence. Battering in teen relationships is very different from intimate partner violence that occurs between adults. The issue of teen dating violence requires national attention and prevention efforts that need to continue focusing on adolescent violence within the larger context of family violence.

The nature of intimate partner violence and sexual violence makes such problems difficult to study. Consequently, much remains unknown about the factors that increase or decrease the likelihood that males will behave violently toward females, the factors that endanger or protect females from violence, and the physical and emotional consequences of such violence for females and their children.

15-37. Reduce physical assaults.

Target: 25.5 physical assaults per 1,000 persons aged 12 years older.

Baseline: 31.1 physical assaults per 1,000 persons aged 12 years and older in 1998.

Target setting method: Better than the best.

Data source: National Crime Victimization Survey (NCVS), U.S. Department of Justice, Bureau of Justice Statistics (rates per 1,000).

Persons Aged 12 Years and Older, 1998	**Physical Assaults** Rate per 1,000
TOTAL	31.1
Race and ethnicity	
American Indian or Alaska Native	DSU
Asian or Pacific Islander	DSU
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	33.7
White	31.1
Hispanic or Latino	25.6

Persons Aged 12 Years and Older, 1998	Physical Assaults Rate per 1,000
Not Hispanic or Latino	31.5
Black or African American	DNA
White	DNA
Gender	
Female	24.3
Male	38.3
Select populations	
Adolescents aged 12 to 15 years	71.2
Adolescents aged 16 to 19 years	74.7
Young adults aged 20 to 24 years	54.8

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.

15-38. Reduce physical fighting among adolescents.

Target: 33 percent.

Baseline: 37 percent of adolescents in grades 9 through 12 engaged in physical fighting in the previous 12 months in 1997.

Target setting method: Better than the best.

Data source: Youth Risk Behavior Survey (YRBS), CDC, NCCDPHP.

Adolescents in Grades 9 Through 12, 1997	Fighting in Past 12 Months Percent
TOTAL	37
Race and ethnicity	
American Indian or Alaska Native	DNC
Asian or Pacific Islander	DNC
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	DNC
White	DNC
Hispanic or Latino	41
Not Hispanic or Latino	DNC
Black or African American	43
White	34

Adolescents in Grades 9 Through 12, 1997	Fighting in Past 12 Months Percent
Gender	
Female	26
Male	46
Select populations	
9th grade	45
10th grade	40
11th grade	34
12th grade	29

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.

15-39. Reduce weapon carrying by adolescents on school property.

Target: 6 percent.

Baseline: 8.5 percent of students in grades 9 through 12 carried weapons on school property during the past 30 days in 1997.

Target setting method: Better than the best.

Data source: Youth Risk Behavior Survey (YRBS), CDC, NCCDPHP.

Students in Grades 9 Through 12, 1997	Weapon Carrying on School Property in Past 30 Days Percent
TOTAL	8.5
Race and ethnicity	
American Indian or Alaska Native	DNC
Asian or Pacific Islander	DNC
Asian	DNC
Native Hawaiian and other Pacific Islander	DNC
Black or African American	DNC
White	DNC
Hispanic or Latino	10.4
Not Hispanic or Latino	DNC
Black or African American	9.2
White	7.8

Students in Grades 9 Through 12, 1997	Weapon Carrying on School Property in Past 30 Days Percent
Gender	
Female	3.7
Male	12.5
Family income level	
Poor	DNC
Near poor	DNC
Middle/high	DNC
Select populations	
9th grade	10.2
10th grade	7.7
11th grade	9.4
12th grade	7.0

DNA = Data have not been analyzed. DNC = Data are not collected. DSU = Data are statistically unreliable.

In 1998, physical assault victimization among adolescents took place twice as often as in the general population of persons age 12 years or older. Assaults were significantly higher among males. While the total assaults for blacks and whites and Hispanics and non-Hispanics were similar, aggravated assault was higher for blacks than whites (11.9 versus 7.0 per 1,000), and simple assault was higher for non-Hispanics than Hispanics (23.9 versus 19.5 per 1,000). Assaults were higher for those with lower household incomes; rates of assault victimization decreased from 54.2 per 1,000 persons in households with annual incomes of less than $7,500 to less than 30 per 1,000 persons in households with annual incomes greater than $35,000.[72a]

In 1997, 36.6 percent of students in grades 9 through 12 had been in a physical fight one or more times during the 12 months preceding the survey.[73] Overall, male students were significantly more likely than female students to have been in a physical fight. This difference was identified for all racial and ethnic and grade subgroups. Overall, African American and Hispanic students were more likely than white students to have been in a physical fight. Male and female students in grade 9 were more likely than male students in grades 11 and 12 and female students in grade 12 to have been in a physical fight. Male and female students in grade 10 were more likely than male and female students in grade 12 to report this behavior.

Weapon carrying on school property during the 30 days before the survey was 8.5 percent nationwide. Overall, male students were more likely than female students

to have carried a weapon on school property. This difference was identified for white and Hispanic students and all grade subgroups. African American female students were more likely than Hispanic and white female students to have carried a weapon on school property.[74]

Violence prevention programs for youth need to focus on strategies that reduce involvement in physical fighting and discourage weapon carrying on school property. Strategies to reduce weapon carrying on school property, physical fighting, and resulting injuries among youth should begin early in life and must be tailored to youth of widely varying social, economic, cultural, and ethnic backgrounds.[75] As with other areas of violence and abuse, carefully controlled studies to evaluate the effectiveness of various strategies and interventions are needed. Physicians and other health professionals are in a position to provide effective primary prevention messages to youth and their families. Also, ED workers treating adolescents with fight-related injuries can practice secondary interventions, as they do with victims of child abuse, sexual assault, or attempted suicide.

Related Objectives From Other Focus Areas

1. Access to Quality Health Services

1-3. Counseling about health behaviors

1-11. Rapid prehospital emergency care

1-12. Single toll-free number for poison control centers

7. Educational and Community-Based Programs

7-3. Health-risk behavior information for college and university students

8. Environmental Health

8-13. Pesticide exposures

8-24. Exposure to pesticides

8-25. Exposure to heavy metals and other toxic chemicals

18. Mental Health and Mental Disorders

18-1. Suicide

18-2. Adolescent suicide attempts

20. Occupational Safety and Health

20-1. Work-related injury deaths

20-2. Work-related injuries

20-5. Work-related homicides

20-6. Work-related assaults

26. Subtance Abuse

26-1. Motor vehicle crash deaths and injuries

26-5. Alcohol-related emergency department visits

26-6. Youth riding with a driver who has been drinking

26-7. Alcohol- and drug-related violence

26-24. Administrative license revocation laws

26-25. Blood alcohol concentration (BAC) levels for motor vehicle drivers

Terminology

(A listing of all abbreviations and acronyms used in this publication appears in Appendix K .)

Age-adjusted injury rate: An injury rate calculated to reflect a standard age distribution.

Attempted rape: Includes males and females, heterosexual and homosexual rape, and verbal threats of rape.

Graduated licensing laws: Require young drivers to progress through phases of restricted driving before they are allowed to get their unrestricted licenses. Such restrictions include a mandatory supervised driving period, night driving curfews, limits on teen passengers riding with a beginning driver, and a lower blood alcohol concentration (BAC) level for teens than for adults.

Homicide: Fatal injury intentionally caused to one human being by another.

Impaired driving: Driving while under the influence of alcohol or drugs.

Injury: Unintentional or intentional damage to the body resulting from acute exposure to thermal, mechanical, electrical, or chemical energy or from the absence of such essentials as heat or oxygen.

Intimate partner(s): Refers to spouses, ex-spouses, boyfriends, girlfriends, and former boyfriends and girlfriends (includes same-sex partners). Intimate partners may or may not be cohabitating and need not be engaging in sexual activities.

Intimate partner violence: Actual or threatened physical or sexual violence or psychological and emotional abuse by an intimate partner.

Motorcyclist: Includes both operator and rider (passenger).

NCUTLO: National Committee on Uniform Traffic Laws and Ordinances.

Pedalcyclists: Riders of bicycles and tricycles.

Premature death: Dying before life expectancy is reached.

Primary enforcement: A stipulation of a safety belt use law that allows law enforcement officials to stop a driver solely on the basis of a safety belt law violation.

Rape: Forced sexual intercourse, including both psychological coercion and physical force. Forced sexual intercourse means vaginal, anal, or oral penetration by the offender(s) and includes incidents of penetration by a foreign object.

Risk factor: A characteristic that has been demonstrated statistically to be associated with a particular injury.

Secondary enforcement: A stipulation of a safety belt use law that allows law enforcement officials to address a safety belt use law violation only after a driver has been stopped for some other purpose.

Sexual assault: A wide range of victimizations separate from rape and attempted rape. Included are attacks or attempted attacks of unwanted sexual contact between the victim and the offender that may or may not involve force; includes grabbing or fondling. Verbal threats also are included.

Suffocation: Includes inhalation and ingestion of food or other objects; accidental mechanical suffocation; suicide and self-inflicted injury by hanging, strangulation, and suffocation; assault by hanging and strangulation; and hanging, strangulation, or suffocation undetermined whether accidental or purposely inflicted.

Target population: The group of persons (usually those at high risk) whom program interventions are designed to reach.

Trauma registry: A collection of data on patients who receive hospital care for certain types of injuries, such as blunt or penetrating trauma or burns. Such collections are designed primarily to ensure quality care in individual institutions and trauma systems but also provide useful data for the surveillance of injury and death.

Unintentional injury: A type of injury that occurs without purposeful intent.

Vehicle miles traveled (VMT): The miles of travel by all types of motor vehicles as determined by the States on the basis of actual traffic counts and established estimating procedures.

Violence: An act carried out with the intention or perceived intention of causing physical pain or injury to another person.

Vulnerable populations: Refers to children, elderly

persons, and persons with disabilities.

Years of potential life lost (YPLL): A statistical measure used to determine premature death. YPLL is calculated by subtracting an individual's age at death from a predetermined life expectancy. The Centers for Disease Control and Prevention generally uses 75 years of age for this purpose (for example, a person who died at aged 35 years would have a YPLL of 40).

References

1. Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS). Deaths: Final Data for 1997. *National Vital Statistics Reports* 47(19), June 1999.

2. Houk, V.; and Brown; S.T.; and Rosenberg, M.; One fine solution to the injury problem. *Public Health Reports* 102:5, 1987

3. Baker, S.P.; O'Neill, B.; Ginsburg, M.J.; and Li, G. *The Injury Fact Book*, 2nd ed. New York: Oxford University Press, 1992.

4. CDC. *Health United States, 1999*. Hyattsville, MD: U.S. Department of Health and Human Services, 1999.

5. U.S. Department of Health and Human Services (HHS), National Institutes of Health, National Institute on Alcohol and Alcoholism. *Ninth Special Report to the U.S. Congress on Alcohol and Health from the Secretary of Health and Human Services*. NIH Pub. No. 97-4017. Washington, DC: the Department, 1997.

6. HHS, CDC, National Center for Injury Prevention and Control. Ten Leading Causes of Injury Deaths.

7. Schappert, S.M. Ambulatory care visits to physician offices, hospital outpatient departments and emergency departments: U.S., 1995. NCHS. *Vital and Health Statistics* 13(29):1-38, 1997.

8. National Safety Council. *Accident Facts*. 1995.

9. National Safe Kids Campaign. *Childhood Injury Factsheet*. Itasca, NY: the Council, 1997.

10. Moscicki, E.K.; O'Carroll, P.W.; Rae, D.S.; Roy, A.E.; Locke, B.Z.; and Regier, D.A. Suicideal Ideation and Attempts: The Epidemiologic Catchement Area Study. *Report of the Secretary's Task Force in Youth Suicide*, Volume 4. Washington, DC: U.S. Department of Health and Human Services, January 1989.

11. Indian Health Service (HIS). Injury Prevention Program. *Injuries Among Native Americans and Alaska Natives*. Rockville, MD: IHS, 1997.

12. United States Fire Administration. *Curious Kids Set Fires*. Washington, DC: Federal Emergency Management Agency, 1990.

13. CDC, NCHS. Deaths: Final Data for 1997. *National Vital Statistics Report* 47(10):1-104, 1999.

13. National Safety Council. *Accident Facts.* Itasca, IL: the Council, 1993.

14. Livingson, I.L., ed. *Handbook of Black American Health: The Mosaic of Conditions, Issues, Policies, and Prospects*. Westport, CT: Greenwood Press, 1994.

15. Anderson, R.N.; Kockanck, K.D.; Murphey, S.L. Report of final mortality statistics, 1995. *Monthly Vital Statistics Report* 45(suppl. 2):11, 1997.

16. CDC. *Morbidity and Mortality Monthly Report* 47(10):193, 1998.

17. HHS, CDC. Ten Leading causes of death, 1995. Atlanta, GA: the Department, 1997.

18. McLoughlin, E.; Annest, J.L.; Fingerhut, L.A.; et al. Recommended framework for presenting injury mortality data. *Morbidity and Mortality Weekly Report* 46(RR-14), 1997.

19. Cummings, P.; Grossman, D.C.; Rivara, F.P.; and Koepsell, T.D. State gun safe storage laws and child mortality due to firearms. *Journal of the American Medical Association* 278(13), 1997.

20. Chaloupka, F.J.; Saffer, H.; and Grossman, M. Alcohol control policies and motor-vehicle fatalities. *Journal of Legal Studies* 22:161-186, 1993.

21 Cook, P.J., and Moore, M.J. Economic perspectives on reducing alcohol-related violence. In: Martin, S.E. *Alcohol and Interpersonal Violence: Fostering Multidisplinary Perspectives.* Based on a workshop on alcohol-related violence sponsored by the National Institute on Alcohol Abuse and Alcoholism, May 14-15, 1992. NIH Pub. No. 93-3496, Rockville, MD: National Institutes of Health, 1993.

22. National Center for Injury Prevention and Control*. Best Practices for Preventing Violence by Children and Adolescents: A source book.* Atlanta, GA: Centers for

Disease Control and revention, 1999 (in press).

23. Rice, D.P.; Mackenzie, E.J.; and Associates. *Cost of Injury in the United States: A Report to Congress*. San Francisco, CA: Institute of Health and Aging, University of California and Injury Prevention Center, The Johns Hopkins University, 1989, p. 143, 163.

24. NCHS. National Vital Statistics System, unpublished data, 1999.

25. Kraus, K.F.; Black, M.A.; Hessol, N.; et al. The incidence of acute brain injury and serious impairment in a defined population. *American Journal of Epidemiology* 119:186-201, 1984.

26. Annest, J.L.; Mercy, J.A.; Gibson, D.R.; and Ryan, G.W. National estimates of nonfatal firearm-related injuries. *Journal of the American Medical Association* 273(22):1749-1754, 1995.

27. CDC. Rates of Homicide, Suicide, and Firearm-related Death Among Children - 26 Industrialized countries, 1950-1993. *Morbidity and Mortality Weekly Report* 46(5):101, 1995.

28. Fingerhut, L.A.; Ingram, D.D; and Feldman, J.J. firearm and nonfirearm homicide among persons 15 to 19 years of age: differences by level of urbanization. United States 1979-89. *Journal of the American Medical Association* 267(22):3048-53, 1992.

29. Max, W., and Rice, D.P. Shooting in the dark: Estimating the cost of firearm injuries. *Health Affairs* 12(4):171-185, 1993.

30. NCHS. *Vital statistics mortality data, underlying cause of death, 1962-97.* [Machine-readable public-use tapes.] Hyattsville, MD: U.S. Department of Health and Human Services; 1999.

31. Litovitz, T.L.; Smilkstein, M.S.; Felberg, L.; et al. 1996 annual report of the American Association of Poison Control Centers Toxic Exposure Surveillance System. *American Journal of Emergency Medicine* 15(5):447-500, 1997.

32. National Safe Kids Campaign. *Poisoning Fact Sheet*. September 1997.

33. HHS, NCHS, National Vital Statistics System, 1997, Washington, DC.

34. National Safe Kids Campaign, December 1998.

35. National Highway Traffic Safety Administration (NHTSA), Fatality Analysis Reporting System (FARS), 1998. HHS, NCHS, National Vital Statistics Systems, 1998: Washington, DC.

36. NHTSA. *Traffic Safety Facts 1998: Pedestrians*. Washington, DC: the Administration, 1998.

37. NHTSA. *Traffic Safety Facts 1998.* Washington, DC; the Administration, 1998.

37. NHTSA. *Traffic Safety Facts 1998: Older Population*. Washington, DC: the Administration, 1998.

38. Advocates for Highway and Auto Safety. *Safety Belt Fact Sheet*. 1998.

39. NHTSA. *Traffic Safety Facts 1997: Children*. Washington, DC, the Administration, 1997.

40. NHTSA. *Traffic Safety Facts 1998: Motorcycles*. Washington, DC; the Administration, 1998.

41. NHTSA. *Traffic Safety Facts 1998: Young Drivers*. Washington, DC; the Administration, 1998.

42. NHTSA. *Traffic Safety Facts 1998: Pedalcyclists*. Washington, DC; the Administration, 1998.

43. Insurance Institute for Highway Safety. *Facts 1996 Fatalities: Bicycles*. Arlington, VA: the Institute, 1997.

44. CDC. Injury-Control Recommendations: Bicycle Helmets *Morbidity and Mortality Weekly Report* 44(RR-1), 1995

45. National Safe Kids Campaign. *State Bike Helmet Legislation*. Winter 1998.

46. Karter, M.J. *Fire Loss in the United States, 1998*. Quincy, MA: National Fire Protection Association, 1999.

47. Hall, J.R. *The U.S. Fire Problem and Overview Report. Leading causes and other patterns and trends.* Quincy, MA: NFPA.

48. CDC, NCHS. *Mortality Data Tapes.* Hyattsville, MD: the Center, 1998.

48a. Hingson, R., and Howland, J. Alcohol and Non-Traffic Unintentional Injuries. *Addiction* 88(7):877-883, 1993.

49. Cummings, S.R.; Rubin, S.M.; and Black, D. The future of hip fractures in the United States. Numbers, costs, and potential effects of postmenopausal estrogen. *Clinical Orthopedics* 252:163:166, 1990.

50. Englander, F.; Hodson, T.J.; and Teregrossa, R.A. Economic dimensions of slip and fall injuries. *Journal of Forensic Science* 41(5):746-773, 1996.

51. Tinetti, M.E., and Speechley, M. Prevention of Falls Among the Elderly. *New England Journal of Medicine* 320(16)1055-1059, 1989.

52. NCHS. *National Mortality Data*. Hyattsville, MD: the Center, 1997.

53. U.S. Department of Transportation. *Boating Statistics 1992*. Pub. No. COMDTPUB P16754.8.

Washington, DC: the Department, 1993.

54. NCHS, *Mortality Data Tapes.* Hyattsville, MD: the Center, 1996.

55. American Academy of Pediatrics. *Injury Prevention and Control for Children and Youth,* 3rd ed., 1997.

*\56. Sacks, J.J.; Lockwood, R.; Hornreich, J.; and Sattin, R.W. Fatal Dog Attacks, 1989-94. *Pediatrics* 97:891-895, 1996.

57. Not in text.

58. NCHS. Mortality data tapes for number of deaths. U.S. Bureau of Census population estimates: Intercensal data are used for 1984-89. Decennial census data are used for 1990. Demo-Detail postcensal population estimates are used for 1991-93.

59. Singh, G.K.; Kochanek, K.D.; and MacDorman, M.F. Advance report of final mortality statistics, 1994. *Monthly Vital Statistics Report* 45(3S). Hyattsville, MD: National Center for Health Statistics, 1996.

60. NCHS. *Mortality Data Tapes.* Hyattsville, MD: the Center, 1994.

61. CDC. *National Summary of Injury Mortality Data, 1987-1994*. Atlanta, GA: National Center for Injury Prevention and Control, 1996.

62. World Health Organization. *World Health Statistics Annual, 1994*. Geneva, Switzerland: WHO, 1995.

63. HHS, Administration on Children, Youth, and Families. *Child Maltreatment 1997: Reports from the States to the National Child Abuse and Neglect Data System.* Washington, DC: U.S. Government Printing Office, 1999.

64. Federal Bureau of Investigation. *Crime in the United States: 1996.* Washington, DC: U.S. Government Printing Office, 1997.

65. Bureau of Justice Statistics. *Violence-Related Injuries Treated in Hospital Emergency Departments*. Washington, DC: U.S. Department of Justice, August 1997.

66. Straus, M.A., and Smith, C. Family patterns and primary prevention of family violence. *Trends in Health Care, Law & Ethics* 8(2):1-25, 1993.

67. How violent are American families? Estimates from the National Family Violence Survey and other studies. In: Straus, M.A., and Gelles, R.J. (eds.). *Physical Violence in American Families: Risk Factors and Adaptations to Violence in 8,145 Families*. New Brunswick, NJ: Transaction Publishers, 1990, 95-112.

68. Gazmararian, J.A.; Lazorick, S.; Spitz, A.M.; Ballard, T.J.; Saltzman, L.E.; and Marks, J.S. Prevalence of violence against pregnant women. *Journal of the American Medical Association* 275:1915-1920, 1996.

69. Hotaling, G.T., and Sugarman, D.B. An analysis of risk markers in husband to wife violence: The current state of knowledge. *Violence and Victims* 1:101-124, 1986.

70. U.S. Department of Justice, Bureau of Justice Statistics. *Crime Victimization in the United States, 1994.* Washington, DC: the Bureau, 1997.

71. Bachman, R., and Taylor, B. The measurement of family violence and rape by the redesigned national crime victimization survey. *Justice Quarterly* 11:701-714, 1994.

72. Kilpatrick, D.G.; Edmunds, C.N.; and Seymour, A.K. *Rape in America: A Report to the Nation, 1992*: pg 2.

72a. DOJ. *Statistics. Criminal Victimization 1998: Changes 1997-98 With Trends, 1993-98.* Pub. No. NCJ-176353. Washington, DC: the Department, July 1999.

73. CDC. Youth Risk Behavior Surveillance - United States. *Morbidity and Mortality Weekly Report* 1(SS03):1, August 14, 1998.

74. CDC. CDC Surveillance Summaries, August 14, 1998. *Morbidity and Mortality Weekly Report* 47(No. SS-3):7-8, 44, 1998.

75. National Center for Injury Prevention and Control. *Best practices for preventing violence by children and adolescents: a source book.* Atlanta, GA: the Center, November 1999 (in press).